

Otway Offshore Project

Operations Environment Plan Revision



Thylacine

Information Sheet | June 2021

Introduction

Beach Energy operates the Otway Gas Plant near Port Campbell which supplies natural gas to Victorian homes and businesses. The gas plant processes raw gas from several existing offshore gas reserves in State and Commonwealth waters (see map over page). Existing offshore infrastructure includes well heads, manifolds, flow lines and tie-ins, offshore platform, and offshore to onshore pipeline from the platform to the gas plant.

Offshore operations are carried out in accordance with an Environment Plan (EP) which must be reviewed at least every five years, and when there are major scope changes. The EP is assessed by the National Offshore Petroleum Safety Management Authority (NOPSEMA) and accepted when it meets regulatory requirements.

Beach is currently developing further offshore production wells to continue supply of natural gas

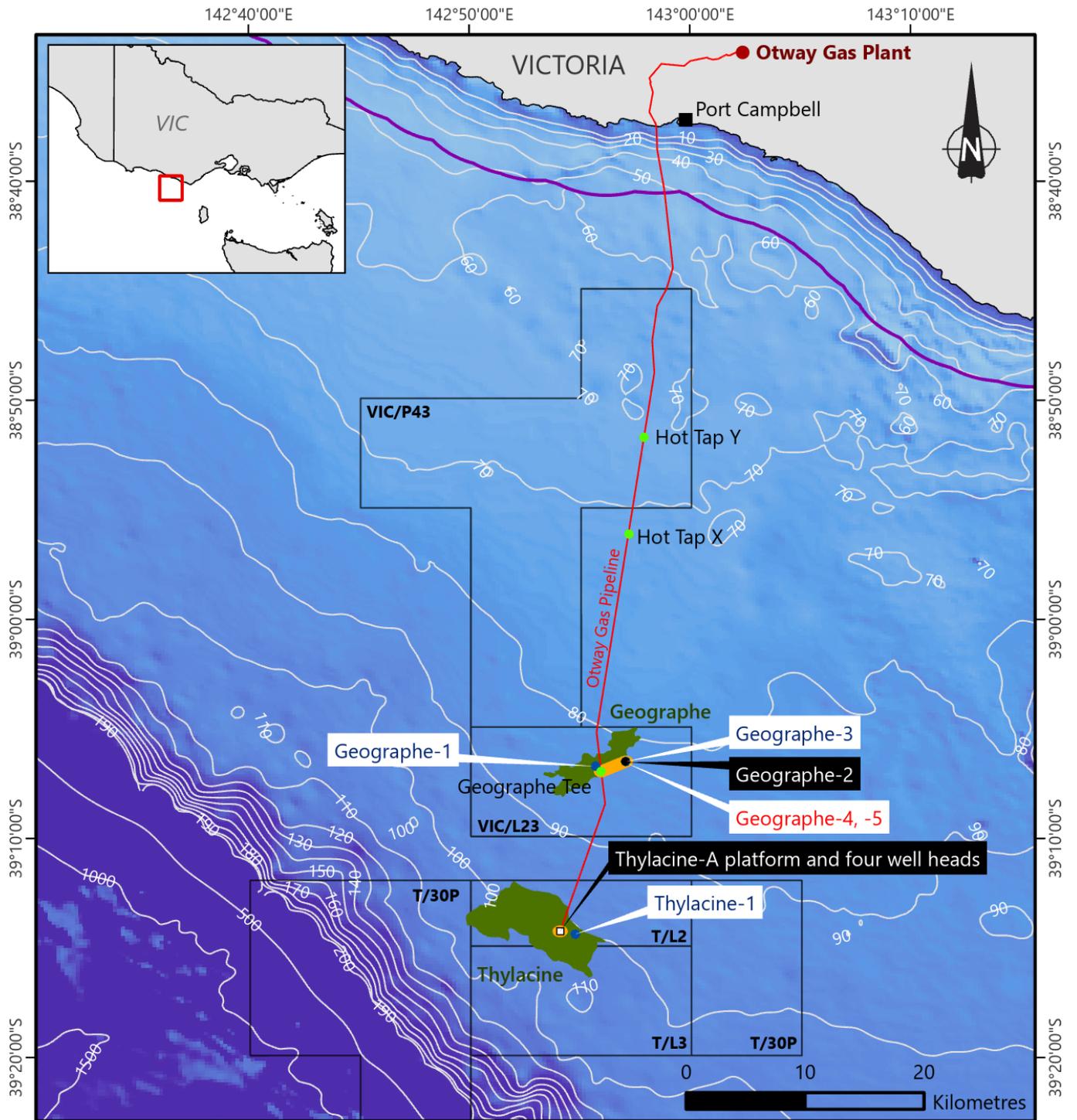
and will be connecting new wells to the existing infrastructure. For further information see: <https://www.beachenergy.com.au/vic-otway-basin/>

The existing Otway Offshore Operations EP will be reviewed to include new production wells and related infrastructure and submitted to NOPSEMA for acceptance.

This information sheet provides an overview of:

- Current offshore operations, and the additional wells and infrastructure to be included in the revised EP
- Regulatory framework for safety and environment requirements, including stakeholder consultation
- Potential impacts and risks in carrying out these operations and measures to reduce and manage in accordance with regulations.

Location map for Otway Offshore Operations EP



GDA2020

- Existing production wells
- New production wells
- Suspended wells
- Hot tap tees
- Thylacine-A platform
- Beach permits
- Existing gas pipeline
- Coastal waters (3nm limit)
- Existing PSZ
- Gas fields

Existing wells and infrastructure

Thylacine-A Platform

The Thylacine-A platform is a steel jacket structure with topsides consisting of an integrated deck on four levels. The platform is designed to be operated as a 'normally unattended installation'. It is remotely operated from the Otway Gas Plant central control room via duplicated communication links ensuring high availability for the control and safety shutdown systems. The platform can continue to operate safely and autonomously upon a loss of communications.

Wells and connections

The Thylacine gas field currently consists of four production wells which are connected to the platform and pipeline, and one suspended subsea well (Thylacine-1). The Geographe gas field consists of one subsea production well (Geographe-2), connected to a subsea manifold with an umbilical to the Thylacine platform and a flowline to the existing offshore to onshore pipeline, and two suspended subsea wells (Geographe-1 and Geographe-3). Control and services to the Geographe production well are provided via the main umbilical from the Thylacine-A Platform.

Pipeline

The Otway Gas Offshore to Onshore Pipeline and monoethylene glycol (MEG) pipeline, which are piggybacked, run from the platform to the Otway Gas Plant. The MEG pipeline supplies MEG and chemicals for injection into the Otway Gas Offshore to Onshore Pipeline at the platform. The pipelines are approximately 80 km in total length, including the offshore section approximately 69 km long.

Maintenance

Routine maintenance of the platform is undertaken by work crews transported by helicopter from Warrnambool approximately once a fortnight during daylight hours. Regular activities include: routine operational checks; instrument and mechanical maintenance; shutdown resets, corrosion monitoring; and chemical replenishment. Specific maintenance and upgrade activities are also carried out to complete requirements identified during the routine checks.

Supply and support vessels

The platform is also visited approximately once per month by a supply vessel from Geelong for the provision of fuel, chemicals, maintenance consumables and equipment.

Vessels are also required for specific activities such as subsea inspection work using Remotely Operated Vehicles (ROVs) and/or divers.

New wells and infrastructure

Geographe wells and infrastructure

Beach's Otway Offshore Project commenced drilling in March 2021. The project includes two new production wells (Geographe-4 and Geographe-5) in the Geographe field which will be connected to the existing subsea infrastructure and flowline to the existing offshore to onshore pipeline.

The Thylacine-A platform, wells, and subsea manifold are controlled and monitored 24 hours per day by the Otway Gas Plant control room. The new wells and associated seabed infrastructure will be within the existing Geographe Petroleum Safety Zone. The new wells will be managed in the same manner as the existing Otway offshore production wells and will be included in existing inspection and maintenance schedules to ensure their ongoing integrity. The current operations EP is being reviewed to include these new wells and infrastructure.

Thylacine wells and infrastructure

Four new Thylacine production wells will also be drilled and connected with a new production manifold, flowlines and umbilicals to the Thylacine-A platform. The operations EP will undergo a further review to include the new Thylacine wells and infrastructure, after the engineering design is completed.

Location and timing

The wells, infrastructure and Thylacine-A Platform are located in Commonwealth waters approximately 55 to 80 km from Port Campbell. The map on page 2 shows the locations of the existing platform, wells, and pipeline, along with the new production wells.

Drilling of the Geographe-4 and 5 wells commenced in March 2021 and are expected to be tied into the existing infrastructure before December 2021. Drilling of the Thylacine wells will proceed after the Geographe wells have been drilled and are expected to be completed before the end of 2022. See further information: <https://www.beachenergy.com.au/vic-otway-basin/>

Regulatory framework

Offshore petroleum activities are regulated under the *Offshore Petroleum and Greenhouse gas Storage Act 2006 (OPGGGS Act)* which requires a Safety Case, Well Operations Management Plan and an Environment Plan for each activity type. The plans are assessed by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) who regulates petroleum activities under the OPGGGS Act.

Environment Plans must include a description of the existing environment and the proposed activity, an evaluation of the impacts and risks associated with the activities, environmental performance outcomes and standards, implementation strategy, and reporting requirements. Beach must demonstrate in the Environment Plan, how it will conduct the activities to ensure that potential impacts are of an acceptable and any residual impacts are reduced to “As Low As Reasonably Practicable” (ALARP).

In developing the Environment Plans, relevant up-to date technical and scientific studies are taken into consideration, along with stakeholder feedback.

Marine environment

Beach recognises the environmental, heritage, social and economic values in the areas in which we operate.

The activities will be conducted in water depths ranging from 80 to 110 metres where there is a variety of marine fauna including the potential presence of:

- Blue, humpback and fin whales, particularly during the summer months
- Southern right and minke whales, particularly during the winter months
- Common dolphins and sharks species throughout the year
- New Zealand and Australian fur seals throughout the year
- Loggerhead, green turtle and leatherback turtles throughout the year.

Commonwealth managed fisheries may operate in the region, including: southern and eastern scalefish and shark; and southern squid jig fishery. Victorian managed fisheries, including: rock lobster and giant crab may also operate in the area but tend to concentrate in the reef areas closer to shore for rock lobster and closer to the continental shelf for giant crab. There is also significant commercial shipping activity in the area.

Mitigation and management

The Environment Plan details a range of controls to reduce and manage environmental impacts and potential risks to acceptable levels as approved by regulators. These include:

- The Thylacine-A Platform and offshore pipeline are marked on navigational charts and the platform has an existing 500 metre petroleum safety zone.
- The Geographe wells and infrastructure are within an existing 500 metre petroleum safety zone.
- Vessels utilised by Beach are required to comply with all applicable marine regulations and observe the minimum approach distances to whales and dolphins set out in national guidelines.
- Gas venting at the Thylacine-A Platform is limited to the minimum required for safe operations. Fuel burning equipment on the platform and vessels is designed and maintained to reduce pollutant emissions to atmosphere.
- Beach operates in compliance with the NOPSEMA accepted Safety Cases and Well Operations Management Plans (for more information see: <https://www.nopsema.gov.au/safety/safety-case/what-is-a-safety-case/>).
- The risk of a loss of containment of hydrocarbons or chemicals is managed through the equipment design process and the implementation of asset integrity and maintenance programs. In addition, process parameters are monitored 24 hours per day by trained and competent personnel who must follow documented procedures.
- Contractors utilised by Beach are subject to a prequalification process and assurance over their activities to ensure compliance with the Environment Plan.

Oil pollution emergency plan

An Environment Plan must also include an Oil Pollution Emergency Plan (OPEP) for managing any hydrocarbon release.

When conducting offshore activities, there is an unlikely risk of release of hydrocarbons (which are primarily gas) or a spill from vessels in the event of an accident. Beach will review its existing OPEP to ensure it includes potential spill risks associated with the proposed activities. The OPEP forms part of the Environment Plans required to be accepted by NOPSEMA for each activity.

Preparing an OPEP involves using hydrocarbons spill modelling information for the local area using the most conservative credible case scenario. The modelling calculates the transport, spreading, entrainment and evaporation of spilled hydrocarbons over time, based on the prevailing wind and current conditions and the volume and physical and chemical properties of possible spills event. The OPEP also assess the likelihood and consequences of any oil spill which must be reduced to ALARP through a range of control measures and include detailed response plans.

The OPEP describes the arrangements for responding to and monitoring any release of hydrocarbon and includes:

- The control measures necessary for rapid response
- Response arrangements and capability in place to ensure rapid implementation and provide for the ongoing maintenance of capability
- Response arrangements and capability in place for monitoring oil pollution to inform response activities as well as monitoring the effectiveness of these activities

These arrangements are based on the worse case spill event associated with the proposed activities to ensure that Beach has the appropriate level of response arrangement and capability.

Key matters in the EP review

Key changes and updates for the revised Environment Plan include:

- Description of Beach as the current asset owner
- Description of Beach's health, safety and environment management system
- Revised impact and risk assessment that meets NOPSEMA's various guidelines released since acceptance of the existing Operations Environment Plan, to demonstrate that the environmental impacts and risks are of an acceptable level and ALARP.
- Revised environmental performance outcomes and environmental performance standards that reflect current best practice and will allow Beach to measure and report on its environmental performance.

The OPEP is not required to be updated as there is no change in the spill risk from the addition of the new Geographe production wells.

Consultation

Beach values stakeholder consultation and feedback. The purpose of consultation is to understand how different stakeholders' functions, interests and activities may be affected by the activities included in the EP.

Beach will consider all feedback, including any concerns and objections. Measures will be explored to reduce any impacts and risks, and responses will be provided to stakeholders.

All stakeholder feedback, records of consultation and copies of correspondence, including emails, will be considered alongside technical and environmental assessments as the Environment Plan is prepared for submission, and will be communicated to NOPSEMA as required by legislation.

Traditional Custodians

Beach would like to respectfully acknowledge the Eastern Maar peoples, the Traditional Custodians of the land on which the Otway Gas Development operates. Beach respects their historical and ongoing connection to country through cultural and spiritual sites, language and ceremony, and would like to pay our respect to their Elders past, present and future.

Questions and answers

How will you ensure that you operate safely?

Safety takes precedence in everything we do. Beach has over 60 years' experience in the oil and gas industry and our marine exploration, development and operations teams have extensive local and international experience. Our gas plant and offshore personnel undertake regular competency assessments and training to ensure their knowledge and skills meet strict operational requirements. We have stringent procedures for assessing, selecting and managing specialist contractors to carry out our marine activities to ensure they will keep our operations safe, operating in accordance with the Wells Operation Management Plan and Environment Plan.

What is a Petroleum Safety Zone (PSZ)?

Petroleum Safety Zones are administered by NOPSEMA under Section 616 of the Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGs Act). PSZs may extend for a radius of up to 500 metres and are gazetted around wells, structures and equipment.

Entry into PSZs is prohibited to all except those vessels authorised to do so by NOPSEMA (as detailed in the gazetted notice) or exempt under Section 615 of the OPGGS Act. PSZs are shown as a 'Restricted Area' on navigation charts.

PSZs are currently in place around the Thylacine-A platform and the Geographe wells and infrastructure. The new Geographe-4 and 5 wells will be within the existing Geographe PSZ.

What is a Safety Case?

A Safety Case is a document that describes the Thylacine-A facility and related infrastructure, the associated hazards and risks and the safety management system in place to control and managed these risks. The Safety Case is revised every five years and is submitted NOPSEMA for acceptance. The purpose of the Safety Case is to demonstrate that the facility complies with the relevant requirements of the *Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations, 2009*.

What is ALARP?

ALARP stands for "As Low As Reasonably Practicable". It is an assessment principle commonly used in the oil and gas industry to assess and reduce potential impacts and risks that cannot be completely eliminated. For information on how NOPSEMA assesses ALARP see: <https://www.nopsema.gov.au/about/our-regulatory-activities/>

What are the impacts to commercial fishing?

Petroleum Safety Zones (PSZs) of 500m radius around the Thylacine-A platform and 500m radius around the existing well heads and infrastructure have been in place for many years, and are marked on marine charts. Fishing cannot occur with those areas to minimise safety risks. Throughout Beach's consultation with the fishing sector and review of fishing effort information published by State and Commonwealth fishery authorities, Beach understands there is relatively low level of fishing activity in the vicinity of the platform, current and new wells. Given the vast fishery areas, the potential for impact is very minor.

During the drilling of new wells and construction of seabed infrastructure, Beach consults extensively with the commercial fishing sector to ensure each other's operations are understood, and potential impacts are minimized.

Isn't natural gas contributing to climate change?

Natural gas is an important partner for renewable energy to ensure stability of affordable fuel supply to homes and industry whilst our economy transitions to a greater percentage from renewables. Beach's Climate Change policy commitment ensures that our practices and procedures align and integrate climate risks into project decision making. For more information on Beach's sustainability commitments, see <https://www.beachenergy.com.au/sustainability-2/>

We welcome your questions and feedback

 1800 959 562

 community@beachenergy.com.au